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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/577,815	04/28/2006	Jonas Scherble	285453US0PCT	6973

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EXAMINER	
LENIHAN, JEFFREY S	
ART UNIT	**PAPER NUMBER**
1765	

NOTIFICATION DATE	DELIVERY MODE
03/02/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/577,815	SCHERBLE ET AL.	
	Examiner	Art Unit	
	Jeffrey Lenihan	1765	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 February 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-13,20 and 21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-13,20 and 21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/3/2011*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is responsive to the amendment filed on 10/20/2010.

2. The objections and rejections not addressed below are deemed withdrawn.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office Action.

Continued Examination Under 37 CFR 1.114

4. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 10/20/2010 has been entered.

Claim Rejections - 35 USC § 103

5. Claims 1, 3, 5, 7, 8, 13, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geyer et al, US5928459, in view of Tada et al, US5225449.

6. The rejection stands as per the reasons outlined in the previous Office Actions, incorporated herein by reference (for claims 1, 3, 5, 7, 8, 13).

7. Regarding the amendment to claims 1, 3: Amendments regarding the claimed upper limit of t-butyl methacrylate (TBMA) content were previously addressed with

respect to claims 2 and 4. Geyer teaches that the polymethacrylimide foam is polymerized in the form of a sheet (abstract).

8. Regarding claims 20 and 21: Geyer does not teach the addition of a nucleating agent to the prior art composition; it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the prior art composition without an insoluble nucleating agent.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Geyer et al, US5928459, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Stein et al, WO 03/020804.

The rejection stands as per the reasons outlined in the previous Office Actions, incorporated herein by reference.

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Geyer et al, US5928459, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Wu et al, US6396451.

The rejection stands as per the reasons outlined in the previous Office Actions, incorporated herein by reference.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Geyer et al, US5928459, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Zacharopoulos et al, US2004/0034932.

The rejection stands as per the reasons outlined in the previous Office Actions, incorporated herein by reference.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Geyer et al, US5928459, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Nieuwendijk et al, US4847908.

The rejection stands as per the reasons outlined in the previous Office Action, incorporated herein by reference.

13. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Geyer et al, US5928459, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Baumann et al, US2002/0037955.

The rejection stands as per the reasons outlined in the previous Office Action, incorporated herein by reference.

14. Claims 1, 3, 5-8, 13, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al, JP 09-235401, in view of Tada et al, US5225449.

15. Claims 1, 3, 5-8, 13, 20, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krieg et al, US5698605, in view of Tada et al, US5225449. The examiner notes that US5698605 and JP 09-235401 are part of the same patent family and therefore recite the same disclosure. The claims are therefore rejected over both

the Japanese and English documents per the following rationale; citations are made with respect to the publication of US5698605.

16. Krieg discloses a polymethacrylimide foam (abstract) (for claims 3, 5) prepared by polymerizing a monomer mixture comprising methacrylic acid, methacrylonitrile (Column 3, lines 16-17), and up to 30% by weight of a comonomer such as a methacrylic ester of a C1-C4 alcohol (Column 3, lines 25-38). Said mixture further comprises 0.05 to 1% by weight of a cross-linking agent, corresponding to claimed component (D) (for claims 1, 3) (Column 3, line s43-50); 0.05 to 0.3% by weight polymerization initiators, corresponding to claimed component (E) (for claims 1, 3) (Column 3, line 56 to Column 4, line 3); and 0.5 to 3% by weight of a propellant, corresponding to claimed component (C) (for claims 1, 3) (Column 4, lines 15-30). The final polymer is prepared in the form of a sheet (for claim 1) followed by tempering and foaming at a temperature of 220 °C (for claims 1, 13) (Column 6, lines 6-11). Krieg does not disclose the addition of an insoluble nucleating agent (for claims 20, 21). The prior art foam may be used in the production of laminates (for claim 6) and machines (for claim 8) such as aircraft (for claim 7) (Column 1, lines 66-67).

17. Regarding the amounts of methacrylic acid and methacrylonitrile: Based on the amounts discussed in the previous paragraph, the total amount of methacrylic acid and methacrylonitrile in the monomer mixture is 70% by weight or more; Krieg further teaches that the ratio of methacrylic acid to methacrylonitrile is 2:3 to 3:2 (Column 3, lines 16-18). Based on these numbers, the prior art composition comprises

approximately 28 to 60% methacrylic acid (for claims 1, 3) and 28 to 60% methacrylonitrile (for claims 1, 3)

18. Krieg is silent regarding the claimed use of TBMA.

19. The disclosure of Tada is discussed in the Office Action mailed on 5/19/2009, incorporated herein by reference.

20. Both Krieg and Tada are directed towards the production of polymethacrylimide foams. As noted above, Krieg teaches that the polymethacrylimide of US5968605 may comprise up to 30% by weight of a methacrylic ester of a C1-C4 alcohol as a comonomer. Barring a showing of factual evidence demonstrating unexpected results commensurate in scope with the claimed invention, it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the polymethacrylimide of Krieg by copolymerizing up to 30% by weight TBMA, a methacrylic ester of a C4 alcohol, as the comonomer, in order to obtain a foam having the improved moisture absorption properties discussed by Tada.

21. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, JP 09-235401, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Wu et al, US6396451.

22. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, US5698605, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Wu et al, US6396451.

23. Krieg is silent regarding the claimed antenna.

24. The disclosure of Wu is discussed in the Office Action mailed on 5/19/2009, incorporated herein by reference.

25. The applied references are directed towards polymethacrylimide foams and their uses. Barring a showing of unexpected results, it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the claimed antenna per the same rationale outlined in paragraph 22 of the 5/19/2009 Office Action.

26. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, JP 09-235401, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Zacharopoulos et al, US2004/0034932.

27. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, US5698605, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Zacharopoulos et al, US2004/0034932.

28. Krieg is silent regarding the claimed X-ray table.

29. The disclosure of Zacharopoulos is discussed in the Office Action mailed on 5/19/2009, incorporated herein by reference.

30. The applied references are directed towards polymethacrylimide foams and their uses. Barring a showing of unexpected results, it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the claimed invention per the same rationale outlined in paragraph 26 of the 5/19/2009 Office Action.

31. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, JP 09-235401, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Nieuwendijk et al, US4847908.

32. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, US5698605, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Nieuwendijk et al, US4847908.

33. Krieg is silent regarding the claimed loudspeaker.

34. The disclosure of Nieuwendijk is discussed in the Office Action mailed on 5/19/2009, incorporated herein by reference.

35. The applied references are directed towards polymethacrylimide foams and their uses. Barring a showing of unexpected results, it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the claimed invention per the same rationale outlined in paragraph 30 of the 5/19/2009 Office Action.

36. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, JP 09-235401, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Baumann et al, US2002/0037955.

37. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Krieg et al, US5698605, and Tada et al, US5225449, as applied to claim 5 above, and further in view of Baumann et al, US2002/0037955.

38. Krieg is silent regarding the claimed pipe.

39. The disclosure of Baumann is discussed in the Office Action mailed on 5/19/2009, incorporated herein by reference.

40. The applied references are directed towards polymethacrylimide foams and their uses. Barring a showing of unexpected results, it therefore would have been obvious to one of ordinary skill in the art at the time the invention was made to prepare the claimed invention per the same rationale outlined in paragraph 34 of the 5/19/2009 Office Action.

Response to Arguments

41. Applicant's arguments filed 10/20/2010 have been fully considered but they are not persuasive.

42. In response to applicant's argument that Geyer is not directed towards improving the size/shape of pores in polymethacrylimide foams, the fact that applicant has recognized another advantage which would flow naturally from following the suggestion of the prior art cannot be the basis for patentability when the differences would otherwise be obvious. See *Ex parte Obiaya*, 227 USPQ 58, 60 (Bd. Pat. App. & Inter. 1985). As discussed in the previous Office Actions, Geyer teaches that up to 20% by weight of a methacrylic ester of a C1-C4 alcohol may be incorporated as a comonomer into the polymethacrylimide foam. It would therefore have been obvious to one of ordinary skill in the art at the time the invention was made to modify the foam of Geyer by using t-butyl methacrylate (TBMA) as said methacrylic ester, in order to obtain the improved moisture absorption properties disclosed by Tada.

43. Regarding claims 20 and 21: Applicant argues that magnesium oxide, used as part of the cross-linking system in the composition of Geyer, is an insoluble nucleating agent and therefore is excluded from the claimed invention; the examiner disagrees. Geyer explicitly states that "the second component (c.2) of the cross-linking agent system (c) consists of magnesium oxide, which is dissolved in the monomer mixture" (Column 5, lines 41-43). The term "insoluble" is used to describe a compound that does not dissolve in a solvent; Geyer's disclosure that magnesium oxide is dissolved in the monomer system therefore demonstrates that magnesium oxide is not insoluble in the prior art monomer mixture. Applicant therefore has not provided evidence demonstrating that the prior art contains an insoluble nucleating agent.

44. Applicant's arguments regarding the claimed upper limit of 4.99 pbw for TBMA content compared to the range taught in the prior art and the allegedly unexpected results due to the claimed TBMA content range have already been addressed in the Advisory Action mailed on 10/28/2010, incorporated herein by reference.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrey Lenihan whose telephone number is (571)270-5452. The examiner can normally be reached on Monday through Thursday from 7:30-5:00 PM, and on alternate Fridays from 7:30-4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Seidleck can be reached on 571-272-1078. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/ Irina S. Zemel/
Primary Examiner, Art Unit 1765

/Jeffrey Lenihan/
Examiner, Art Unit 1765

/JL/